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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT : Jörg SCHWARZBICH

SERIAL NO.: UNASSIGNED (PCT/EP01/04583)

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Richard M. Goldberg  
(Name of Registered Representative)  
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Richard M. Goldberg January 8,  
(Signature and Date) 2002

PRELIMINARY AMENDMENT

ASSISTANT COMMISSIONER FOR PATENTS  
WASHINGTON, D.C. 20231

Dear Sir:

Prior to examination of the above-identified application,  
please amend the same as follows:

IN THE SPECIFICATION:

The following amendments do not count blank lines in the  
line numbering.

Page 1, after the title and before line 1, insert the  
following heading:

BACKGROUND OF THE INVENTION

Page 1, between lines 22 and 23, insert the following  
heading: SUMMARY OF THE INVENTION

Page 3, cancel lines 6 and 7 in their entirety.

Page 4, cancel the paragraph at lines 9-22, and in place  
thereof, insert the following new paragraph:

The thickness of the individual cage sections can be adapted to the clearance between the internal element and external element, taking into consideration unavoidable tolerances, so that the internal element is supported directly over the cage at the external element, when the elastic deformation of the hollow bodies exceeds a certain value. In this way, the maximum twisting between the internal element and the external element can be limited by a suitable configuration of the cage. Alternatively or in addition, for limiting the twisting, it is also possible to insert in each hollow body a solid roll, which lies with a certain clearance in the hollow body and limits the extent of the elastic flattening of the hollow body. Furthermore, it is conceivable to insert alternately hollow bodies and solid rolls as roll barrels in the windows of the cage. The rolls then have a somewhat smaller diameter than the hollow bodies, so that they lie with clearance

between the internal element and the external element and limit only the deformation of the hollow bodies.

Page 4, between lines 22 and 23, insert the following heading:

BRIEF DESCRIPTION OF THE DRAWINGS

Page 5, between lines 6 and 7, insert the following heading: DETAILED DESCRIPTION

Page 6, line 20 - Page 7, line 2, cancel the paragraph, and in place thereof, insert the following new paragraph:

Before the installation in the telescopic mechanism, the three sections 22 of the cage 20, which are connected with one another by the two flexible cross members 24, can assume the shape of a flat stretched tape, a section of which is shown in Figure 2. The section 22, in which three helical springs 18 are held in appropriate window-like openings 26 one behind the other in the axial direction of the telescopic mechanism, can be seen there partly in plan view and partly in section. In the upper side of the section 22, visible in Figure 2, as well as on the invisible reverse side, the walls of the openings 26 have catches

28, which project inward, hold the respective helical spring 18 positively in position and are dimensioned so that the helical springs can be clipped in elastically during the installation.

**IN THE CLAIMS:**

Page 9, line 1, before claim 1, cancel CLAIMS, and in place thereof, insert:

**WHAT IS CLAIMED IS:**

Amend claims 1-13 and add new claims 14-20, as follows:

1. (Amended) A telescopic mechanism for steering columns of motor vehicles, comprising:

an internal element which has a flattening at least on one side,

an external element which is complementary to the internal element, and

roll barrels for guiding the internal element in the external element, and which roll barrels roll at the flattening, at least some of the roll barrels constructed as hollow

elasticity bodies.

2. (Amended) The telescopic mechanism of claim 1, wherein the hollow bodies are helical springs.

3. (Amended) The telescopic mechanism of claim 2, wherein the helical springs are tensile springs having coils of which, in an unstressed state, lie against one another on block.

4. (Amended) The telescopic mechanism of claim 2, wherein the helical springs are formed from a spring steel with a rectangular cross section.

5. (Amended) The telescopic mechanism of claim 1, wherein the hollow bodies are hollow cylinders.

6. (Amended) The telescopic mechanism of claim 5, wherein the hollow cylinders are formed by a rolled-up blank such that ends of the blank abut one another with formation of a seam.

7. (Amended) The telescopic mechanism of claim 6, wherein the seam extends obliquely to an axis of the respective hollow cylinder.

8. (Amended) The telescopic mechanism of claim 7, wherein the seam extends around the respective hollow cylinder at least once.

9. (Amended) The telescopic mechanism of claim 1, wherein the internal element has a polygonal external cross section and forms several flattenings, which are supported in each case over a set of said hollow bodies at a corresponding flattening of an  
5 inner cross section of the external element.

10. (Amended) The telescopic mechanism of claim 1, further comprising a cage which holds the hollow bodies and which fills a

space between the internal element and the external element with little clearance and forms a boundary for deformation of an  
5 external cross section of the hollow bodies.

11. (Amended) The telescopic mechanism of claim 10, wherein the cage forms several thickened sections which in each case are assigned to a flattening of the internal element and accommodate a set of hollow bodies and are connected with one another by  
5 flexible cross members.

12. (Amended) The telescopic mechanism of claim 11, wherein the cage is an injection-molded part, which is produced as a stretched tape and is bent at the cross members into a shape corresponding to the external cross section of the internal  
5 element.

13. (Amended) The telescopic mechanism of claim 1, further comprising a solid cylindrical roll which supports an inner surface of the hollow body with clearance, limits elastic deformation of an outer cross section of the hollow body, and is  
5 inserted into at least one of the hollow bodies.

14. (New) The telescopic mechanism of claim 3, wherein the helical springs are formed from a spring steel with a rectangular cross section.

15. (New) The telescopic mechanism of claim 2, wherein the internal element has a polygonal external cross section and forms several flattenings, which are supported in each case over a set of said hollow bodies at a corresponding flattening of an inner  
5 cross section of the external element.

16. (New) The telescopic mechanism of claim 5, wherein the internal element has a polygonal external cross section and forms several flattenings, which are supported in each case over a set of said hollow bodies at a corresponding flattening of an inner  
5 cross section of the external element.

17. (New) The telescopic mechanism of claim 2, further comprising a cage which holds the hollow bodies and which fills a space between the internal element and the external element with little clearance and forms a boundary for deformation of an  
5 external cross section of the hollow bodies.

18. (New) The telescopic mechanism of claim 5, further comprising a cage which holds the hollow bodies and which fills a space between the internal element and the external element with little clearance and forms a boundary for deformation of an  
5 external cross section of the hollow bodies.

19. (New) The telescopic mechanism of claim 2, further comprising a solid cylindrical roll which supports an inner surface of the hollow body with clearance, limits elastic

deformation of an outer cross section of the hollow body, and is  
5 inserted into at least one of the hollow bodies.

20. (New) The telescopic mechanism of claim 5, further  
comprising a solid cylindrical roll which supports an inner  
surface of the hollow body with clearance, limits elastic  
deformation of an outer cross section of the hollow body, and is  
5 inserted into at least one of the hollow bodies.



R E M A R K S

Claims 1-20 are now in this application, and are presented for the Examiner's consideration.


The specification has been amended to add headings and correct various errors. A marked-up copy of the specification is enclosed.

In addition, the claims have been amended to eliminate numerals, provide proper antecedent basis, positively recite the elements and to eliminate all multiple dependent claims. For this latter reason, new claims 14-20 have been added.

Please charge any additional fees incurred by this Preliminary Amendment, or credit any overpayment, to Deposit Account No. 07-1524.

It is hoped that this Preliminary Amendment will facilitate an examination of the application on its merits.

Respectfully submitted,

  
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Enclosure: MARKED-UP AMENDMENTS TO CLAIMS  
MARKED-UP AMENDMENTS TO SPECIFICATION

MARKED-UP AMENDMENTS TO SPECIFICATION

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each hollow body a solid roll, which lies with a certain clearance in the hollow body and limits the extent of the elastic flattening of the hollow body. Furthermore, it is conceivable to insert alternatingly [alternatively] hollow bodies and solid rolls as roll barrels in the windows of the cage. The rolls then have a somewhat smaller diameter than the hollow bodies, so that they lie with clearance between the internal element and the external element and limit only the deformation of the hollow bodies.

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in Figure 2. The section 22, in which three helical springs 18 are held in appropriate window-like openings 26 one behind the other in the axial direction of the telescopic mechanism, can be seen there partly in plan view and partly in section. In the upper side of the section 22, visible in Figure 2, as well as on the invisible reverse side, the walls of the openings 26 have catches 28, which project inward, hold the respective helical spring [screw] 18 positively in position and are dimensioned so that the helical springs [screws] can be clipped in elastically during the installation.

MARKED-UP AMENDMENTS TO CLAIMS

1. (Amended) A telescopic mechanism[, especially] for steering columns of motor vehicles, comprising: [with]

an internal element [(10),] which has a flattening [(12)] at least on one side, [and]

5 an external element [(14),] which is complementary to the internal element [(10)], and

roll barrels for guiding [in which] the internal element [is guided with roll barrels] in the external element, and which roll barrels roll at the flattening [(12)], [wherein]  
10 at least some of the roll barrels [are] constructed as hollow elasticity bodies [(18; 32; 36; 40)].

2. (Amended) The telescopic mechanism of claim 1, wherein the hollow bodies are helical springs [(18)].

3. (Amended) The telescopic mechanism of claim 2, wherein the helical springs [(18)] are tensile springs[, the] having coils of which, in [the] an unstressed state, lie against one another on block.

4. (Amended) The telescopic mechanism of claim 2 [claims 2 or 3], wherein the helical springs [(18)] are formed from a spring steel with a rectangular cross section.

5. (Amended) The telescopic mechanism of claim 1, wherein the hollow bodies are hollow cylinders [(32; 36; 40)].

6. (Amended) The telescopic mechanism of claim 5, wherein the hollow cylinders [(32; 36; 40)] are formed by [rolling up] a rolled-up blank [(32a; 36a; 40a) in] such [a manner,] that [the] ends of the blank abut one another with formation of a seam [(34; 38; 42)].

7. (Amended) The telescopic mechanism of claim 6, wherein the seam [(34; 38; 42)] extends obliquely to [the] an axis of the respective hollow cylinder.

8. (Amended) The telescopic mechanism of claim 7, wherein the seam [(34; 38)] extends around the respective hollow cylinder at least once.

9. (Amended) The telescopic mechanism of claim 1 [one of the preceding claims], wherein the internal element [(10)] has a polygonal external cross section and forms several flattenings [(12)], which are supported in each case over a set of said hollow bodies [(18)] at a corresponding flattening [(16)] of [the] an inner cross section of the external element [(14)].

10. (Amended) The telescopic mechanism of claim 1 [one of the preceding claims], further comprising a cage which holds [wherein] the hollow bodies [(18) are held in a cage (20),] and which fills [the] a space between the internal element [(10)] and  
5 the external element [(14)] with little clearance and forms [the] a boundary for [the] deformation of [the] an external cross section of the hollow bodies [helical springs (18)].

11. (Amended) The telescopic mechanism of claim [claims 9 and] 10, wherein the cage [(20)] forms several thickened sections [(22)] which in each case are assigned to a flattening [(12)] of the internal element [(10)] and accommodate a set of hollow  
5 bodies [(18)] and are connected with one another by flexible cross members [(24)].

12. (Amended) The telescopic mechanism of claim 11, wherein the cage [(20)] is an injection-molded part, which is produced as a stretched tape and [can be] is bent at the cross members [(24)] into a shape corresponding to the external cross section of the  
5 internal element [(10)].

13. (Amended) The telescopic mechanism of claim 1 [one of the preceding claims], [wherein] further comprising a solid cylindrical roll [(30),] which supports [the] an inner surface of the hollow body [(18)] with clearance, [and] limits [the] elastic  
5 deformation of [the] an outer cross section of the hollow body,

and is inserted into at least one of the hollow bodies [(18)].

14. (New) The telescopic mechanism of claim 3, wherein the helical springs are formed from a spring steel with a rectangular cross section.

15. (New) The telescopic mechanism of claim 2, wherein the internal element has a polygonal external cross section and forms several flattenings, which are supported in each case over a set of said hollow bodies at a corresponding flattening of an inner  
5 cross section of the external element.

16. (New) The telescopic mechanism of claim 5, wherein the internal element has a polygonal external cross section and forms several flattenings, which are supported in each case over a set of said hollow bodies at a corresponding flattening of an inner  
5 cross section of the external element.

17. (New) The telescopic mechanism of claim 2, further comprising a cage which holds the hollow bodies and which fills a space between the internal element and the external element with little clearance and forms a boundary for deformation of an  
5 external cross section of the hollow bodies.

18. (New) The telescopic mechanism of claim 5, further comprising a cage which holds the hollow bodies and which fills a space between the internal element and the external element with



little clearance and forms a boundary for deformation of an  
5 external cross section of the hollow bodies.

19. (New) The telescopic mechanism of claim 2, further  
comprising a solid cylindrical roll which supports an inner  
surface of the hollow body with clearance, limits elastic  
deformation of an outer cross section of the hollow body, and is  
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